vollrath

Dispersers
Bead-Mills
Mixers
Stirrers

Bead-Mills

Application

VOLLRATH-bead-mills type VMSM are used for wet grinding of suspensions and pigment pastes. They are well proven and widely used in the paint and coatings industries.

Principle

The working principle is that a shaft fitted with grinding discs, rotates within a fixed grinding chamber that has been charged with the chosen grinding beads.

The mill-base is pumped through the grinding chamber and the disc rotation move the beads and mill-base mixture at high speed.

The ground product is separated from the grinding media at the outlet by a slotted screen.

VMSM-TS 2/30 B

High performance and efficiency

Because of VOLLRATH's unique square shaped (with rounded corners) grinding chamber and special grinding discs, a very high turbulence and torque is transmitted between the discs, millbase/beads mixture and grinding chamber. This ensures a very high output and an excellent efficiency.

Automation / Production data acquisition

Optionally, all production parameters can be made available on an interface, including the input grinding work in **kWh**.

By executing the control with PLC and the operating with **touch screen**, the recipes can be stored with the set point parameters. In the event of repetition, a recipe is called up and the corresponding parameters are set automatically.

In many cases remote maintenance is also installed.

Touch screen

Frequency converter operation / Control / Optimizing

The drives of both the grinding shaft and feed pump are fully controlled by frequency converters.

Having full speed control of the grinding shaft and product pump allows:

- Optimum grinding conditions for any product can be achieved.
- Mill base dwell time within the grinding chamber and the amount of work respectively particle size reduction on the product is controlled by the selected shaft- and pump-speeds.
- Easy start up of the mill using the high torque of the drive at the frequency converter (1.5-fold).
- A slow shaft speed selected when cleaning ensures minimal wear.

If one pass through a single grinding chamber is not sufficient to develop the product to the required specification, there are three options:

- A second or third pass through the grinding chamber.
- Re-circular grinding (see page 3).
- Using a **Double-chamber-bead-mill** (see page 3 and page 5 below).

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Re-Circular grinding

The mill base is pumped from its holding vessel, passed through the grinding chamber and then returned to the same vessel, whilst being stirred continually to keep it homogeneous at all times.

This process is continued until the desired specification is achieved.

The VOLLRATH bead-mill type VMSM 1/.. B with its large outlet slotted screen is ideal for this application.

Slotted screen

VMSM 1/15 B FU

Ideal for **Re-Circular grinding** are
Single-chamber bead mills
from VOLLRATH

Double-chamber-bead-mill

For large production runs where the required grind specification cannot be achieved in one pass or the output is slow, the VOLLRATH double-chamber-mill type VMSM 2/..B is the best option. This mill has 2 grinding chambers piped in series. The first chamber can be filled with big beads for coarse grinding and the second can be filled with small beads for very efficient fine grinding. For very difficult products 3 or 4 grinding chambers can be linked in series.

Laboratory and doing test

Trials can be carried out in the VOLLRATH laboratory to establish optimum through-put rates and machine sizing etc.

Explosion-protection (ATEX)

Explosion-proof bead-mills according to EC-Directive (ATEX) are standard at VOLLRATH.

Robust machine construction and excellent service

VOLLRATH bead-mills are of a robust construction ensuring many years service. The grinding shaft is sealed with a high quality double mechanical seal. Wear parts are available from our extensive stores and an excellent service is guaranteed.

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VSMT

Laboratory-Bead-Mill for Batch operation*

Type	Disc diam. mm ⌀	Power kW	Speed min-1	Millbase quantity l	Volume l
VSMT	75	1.1	ca. 3000	ca. 0.5	1.9

* with **cylindrical** grinding chamber and with water cooling

VSMT/VDT 2.1

2 in 1

VSMT remodable to VDT 2.1

VSMT/**VDT 2.1**

Laboratory-Bead-Mill / Laboratory-Disperser

Type	Disc diam. mm ⌀	Power kW	Speed min-1	Lift mm	Millbase quantity l	Volumen l
VSMT/VDT 2.1 as Bead-Mill*	75	1.49	3100		ca. 0.5	1.9
VSMT/**VDT 2.1** as Disperser	50/65/80/90	1.49	295-8500	400		1 -15

* with **cylindrical** grinding chamber and with water cooling

Laboratory-Bead-Mill with **square shaped** chamber

Type
VMSM 1/0.5 A FU (see page 5 above)

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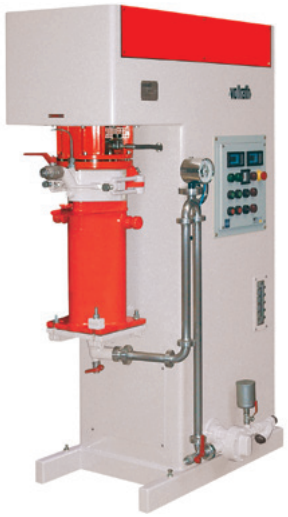

Single-Chamber-Bead-Mills

Type	Grindingshell aprox. l	Power kW	Outputrates aprox. l/h
VMSM 1/ 0.5 A FU[1) 2)]	1 x 0.5	0.75	2- 12
VMSM 1/ 2 A FU[1)]	1 x 2	3	8- 50
VMSM 1/ 8 B FU	1 x 8	11	30- 200
VMSM 1/ 15 B FU	1 x 15	15	60- 400
VMSM 1/ 30 B FU	1 x 30	30	120- 800
VMSM 1/ 60 B FU	1 x 60	45	250-1400
VMSM 1/120 B FU	1 x 120	75	450-2800

1) Also as simple Table- or Tripod-execution available.
2) Also as Laboratory-execution available.

Double-Chamber-Bead-Mills

Type	Grindingshell aprox. l	Power kW	Outputrates aprox. l/h
VMSM 2/ 2 A FU	2 x 2	5.5	16- 100
VMSM 2/ 8 B FU	2 x 8	18.5	60- 400
VMSM 2/ 15 B FU	2 x 15	30	120- 800
VMSM 2/ 30 B FU	2 x 30	55	250-1600
VMSM 2/ 60 B FU	2 x 60	90	500-2800
VMSM 2/120 B FU	2 x 120	160	1000-6000

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